



Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 7190-1 (2004): Coke – Methods of Test, Part 1:
Determination of Bulk Density in a Small Container [PCD 7:
Solid Mineral Fuels]

“ज्ञान से एक नये भारत का निर्माण”

Satyanaaranay Gangaram Pitroda

Invent a New India Using Knowledge



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartṛhari—Nītiśatakam

“Knowledge is such a treasure which cannot be stolen”



BLANK PAGE



PROTECTED BY COPYRIGHT

भारतीय मानक

कोक — परीक्षण पद्धतियाँ

भाग 1 छोटे कन्टेनरों में स्थूल घनत्व ज्ञात करना

(पहला पुनरीक्षण)

Indian Standard

COKE — METHODS OF TEST

PART 1 DETERMINATION OF BULK DENSITY IN A SMALL CONTAINER

(*First Revision*)

ICS 75.160.10

© BIS 2004

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

NATIONAL FOREWORD

This Indian Standard (Part 1) (First Revision) which is identical with ISO 567 : 1995 ‘Coke — Determination of bulk density in a small container’ issued by the International Organization for Standardization (ISO) was adopted by the Bureau of Indian Standards on the recommendations of the Solid Mineral Fuels Sectional Committee and approval of the Petroleum, Coals and Related Products Division Council.

This Indian Standard was first published in 1974 covering the methods of determination of bulk density of coke in a small container (based on ISO/R 567 : 1967) and determination of bulk density of coke in a large container (based on ISO/R 1013 : 1969). Since ISO/R 567 and ISO/R 1013 have subsequently been published as ISO 567 : 1974 and ISO 1013 : 1975 respectively and revised in the year 1995, the Committee decided to revise this Indian Standard in two parts with the adoption of the ISO 567 and ISO 1013 under dual numbering system. Consequently the designation and title of the standard has been modified as follows:

IS 7190 (Part 1)/ISO 567 : 1995 Coke — Methods of test: Part 1 Determination of bulk density in a small container (*first revision*)

IS 7190 (Part 2)/ISO 1013 : 1995 Coke — Methods of test: Part 2 Determination of bulk density in a large container (*first revision*)

This Indian Standard (Part 1) covers the method for the determination of bulk density in a small container. Method for determination of bulk density in a large container is covered in IS 7190 (Part 2).

The text of ISO Standard has been proposed to be approved as suitable for publication as an Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

- Wherever the words ‘International Standard’ appear referring to this standard, they should be read as ‘Indian Standard’.
- Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

CROSS REFERENCES

In this adopted standard reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards which are to be substituted in their place are listed below along with their degree of equivalence for the editions indicated. However, that International Standard cross-referred in this adopted ISO Standard which has subsequently been revised, position in respect of latest ISO Standard has been given:

<i>International Standard</i>	<i>Corresponding Indian Standard</i>	<i>Degree of Equivalence</i>
ISO 579 : 1999 Coke — Determination of total moisture	IS 1350 (Part 1) :1984 Methods of test for coal and coke: Part 1 Proximate analysis (<i>second revision</i>)	Technically not equivalent
ISO 1013 : 1995 Coke — Determination of bulk density in a large container	IS 7190 (Part 2) : 2004 Coke — Methods of test: Part 2 Determination of bulk density in a large container (<i>first revision</i>)	Identical

The Technical Committee responsible for the preparation of this standard will review the provision of ISO 579 and will decide whether it is acceptable for use in conjunction with this standard.

In reporting the results of a test or analysis made in accordance with this standard, if the final value, observed or calculated, is to be rounded off, it shall be done in accordance with IS 2 : 1960 ‘Rules for rounding off numerical values (*revised*)’.

Indian Standard

COKE — METHODS OF TEST

PART 1 DETERMINATION OF BULK DENSITY IN A SMALL CONTAINER

(First Revision)

1 Scope

This International Standard specifies a method for the determination of the bulk density of coke in a cubical container of capacity 0,2 m³. It is applicable to coke with a nominal top size not greater than 125 mm.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 579:1981, *Coke — Determination of total moisture content*.

ISO 1013:1995, *Coke — Determination of bulk density in a large container*.

3 Definition

For the purposes of this International Standard, the following definition applies.

3.1 bulk density: The mass of a portion of a solid mineral fuel divided by the volume of the container which is filled by that portion under specified conditions.

4 Principle

A weighed container of known volume is filled with coke and the increase in mass is determined.

5 Apparatus

5.1 Cubical container, of capacity 0,200 m³ and internal dimension 585 mm, with a smooth inner surface, rigidly constructed and fitted with handles.

5.2 Weighing machine, preferably of the platform type, of maximum capacity 300 kg and sufficiently accurate that the weighing error does not exceed 0,1 % of the maximum load or 250 g, whichever is the smaller.

6 Test sample

Take a sample (for physical testing) in accordance with ISO 2309:1980, *Coke — Sampling*¹⁾.

7 Procedure

Place the container (5.1) on the weighing machine (5.2) and record its mass. Charge the coke slowly into the container until pieces of coke project above the top of the container across the whole surface. The height of drop of the coke shall not exceed 250 mm.

Slide a straightedge across the top of the container and remove any pieces of coke which obstruct its passage. Weigh the charged container.

Carry out a duplicate determination by repeating the procedure using a second portion of the test sample.

1) In due course, ISO 2309 will be replaced by ISO 13909-6, *Hard coal and coke — Sampling — Part 6: Coke — Preparation of test samples*.

8 Expression of results

The bulk density in a small container (ρ_s) of the coke, in kilograms per cubic metre, on a dry basis, is given by the equation:

$$\rho_s = \frac{m_2 - m_1}{V} \times \frac{100 - M}{100}$$

where

- m_1 is the mass, in kilograms, of the empty container;
- m_2 is the mass, in kilograms, of the container plus coke;
- V is the capacity, in cubic metres, of the container;
- M is the total moisture content of the coke, expressed as a percentage by mass, determined in accordance with ISO 579.

Calculate the mean of the two determinations and report the result to three significant figures.

For calculation of the result on an "as sampled" basis, omit the correction factor for moisture, i.e. " $(100 - M)/100$ ", in the equation.

9 Precision

9.1 Repeatability limit

The results of duplicate determinations, carried out in the same laboratory by the same operator with the

same apparatus on representative portions taken from the same test sample, should not differ by more than 30 kg/m³.

9.2 Reproducibility

No value for reproducibility can be quoted for determinations carried out in different laboratories because the transport of coke samples involves the risk of breakage and thus alteration of the size distribution and the bulk density.

10 Test report

The test report shall include the following:

- a) the method used by reference to this International Standard;
- b) a complete identification of the sample;
- c) the date of the test;
- d) the results expressed in accordance with clause 8;
- e) any unusual features noted during the determination;
- f) any operation not included in this International Standard, or regarded as optional.

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act, 1986* to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Copyright

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in the course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designations. Enquiries relating to copyright be addressed to the Director (Publications), BIS.

Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Catalogue' and 'Standards : Monthly Additions'.

This Indian Standard has been developed from Doc : No. PCD 7 (1970).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110 002
Telephones : 2323 0131, 2323 3375, 2323 9402 Website : www.bis.org.in

Regional Offices :

Central	: Manak Bhavan, 9 Bahadur Shah Zafar Marg NEW DELHI 110 002	{ 2323 7617 2323 3841
Eastern	: 1/14 C. I. T. Scheme VII M, V. I. P. Road, Kankurgachi KOLKATA 700 054	{ 2337 8499, 2337 8561 2337 8626, 2337 9120
Northern	: SCO 335-336, Sector 34-A, CHANDIGARH 160 022	{ 260 3843 260 9285
Southern	: C. I. T. Campus, IV Cross Road, CHENNAI 600 113	{ 2254 1216, 2254 1442 2254 2519, 2254 2315
Western	: Manakalaya, E9 MIDC, Marol, Andheri (East) MUMBAI 400 093	{ 2832 9295, 2832 7858 2832 7891, 2832 7892

Branches: AHMEDABAD. BANGALORE. BHOPAL. BHUBANESHWAR. COIMBATORE. FARIDABAD. GHAZIABAD. GUWAHATI. HYDERABAD. JAIPUR. KANPUR. LUCKNOW. NAGPUR. NALAGARH. PATNA. PUNE. RAJKOT. THIRUVANANTHAPURAM. VISAKHAPATNAM.